

1. (currently amended) A process for isolating nucleic acids in an isolation device comprising the following steps:

- (a) providing an isolation device comprising:
 - (1) a generally cylindrical chamber defining a first opening at one end and a second opening at the other end, and
 - (2) a non-siliceous surface situated in said chamber between said first and second openings and having a first side facing said first opening and an opposing second side facing said second opening;
- (b) charging a said non-siliceous surface from a given direction with nucleic acids of a sample applied through said first opening, wherein said non-siliceous surface has two opposing sides;
- (c) immobilizing the nucleic acids of the sample on one side of the non-siliceous surface situated in said chamber by applying an immobilization buffer to said non-siliceous surface through said first opening;
- (d) releasing the immobilized nucleic acids from the non-siliceous surface situated in said chamber by applying an elution agent to said non-siliceous surface through said first opening; and
- (e) removing the released nucleic acids through said first opening from the same side of the non-siliceous surface on which the nucleic acids were immobilized.

2. (currently amended) The process according to claim 1, wherein the non-siliceous surface situated in said chamber of said isolation device is oriented so that said first side one of the two opposing sides of the non-siliceous surface is on top of said second the other side and so that the charging and the removal of the nucleic acids takes place from the top opposing side of the non-siliceous surface.

3. (currently amended) The process according to claim 1, wherein, between the immobilization and release steps, a washing of the immobilized nucleic acids with at least one washing buffer takes place, wherein said washing buffer is applied through said first opening of said chamber of said isolation device.

4. (currently amended) The process according to claim 3, wherein the washing includes the following steps for each washing buffer:

- transferring a predetermined amount of washing buffer to the non-siliceous surface situated in said chamber of said isolation device by applying said washing buffer through said first opening of said chamber of said isolation device, and
- drawing the washing buffer through the non-siliceous surface by suction and through said second opening of said chamber of said isolation device.

5. (currently amended) The process according to claim 1 further comprising the following steps:

- mixing of the sample containing nucleic acids with an immobilization buffer;
- charging of the mixture of said sample containing nucleic acids with the immobilization buffer on to the non-siliceous surface situated in said chamber of said isolation device by applying said mixture through said first opening of said chamber of said isolation device;
- drawing the fluid components of said mixture through the non-siliceous surface and through said second opening of said chamber of said isolation device.

6. (withdrawn)

7. (withdrawn)

8. (withdrawn)

9. (currently amended) The process according to claim 1, wherein characterized by the fact that between the release and the removal steps at least one chemical reaction is carried out on the nucleic acids.

10. (original) The process according to claim 5, wherein said immobilization buffer includes aqueous solutions of salts of alkaline and alkaline earth metals with mineral acids.

11. (original) The process according to claim 10, wherein said immobilization buffer includes alkaline or alkaline earth halogenides or sulfates.
12. (original) The process according to claim 11, wherein said immobilization buffer includes halogenides of sodium or potassium or magnesium sulfate.
13. (previously amended) The process according to claim 5, wherein said immobilization buffer includes aqueous solutions of salts of monobasic or polybasic or polyfunctional organic acids with alkaline or alkaline earth metals.
14. (previously amended) The process according to claim 13, wherein said aqueous solutions of salts of polyfunctional organic acids with alkaline or alkaline earth metals includes aqueous solutions of salts of sodium, potassium, or magnesium with organic dicarboxylic acids.
15. (original) The process according to claim 14, wherein said organic dicarboxylic acid is oxalic acid, malonic acid, or succinic acid.
16. (previously amended) The process according to claim 13, wherein said aqueous solutions of salts of polyfunctional organic acids with alkaline or alkaline earth metals includes aqueous solutions of salts of sodium or potassium in combination with hydroxycarboxylic or polyhydroxycarboxylic acid.
17. (original) The process according to claim 16, wherein said polyhydroxycarboxylic acid is citric acid.
18. (original) The process according to claim 5, wherein said immobilization buffer includes hydroxyl derivates of aliphatic or acyclic saturated or unsaturated hydrocarbons.
19. (original) The process according to claim 18, wherein said hydroxyl derivatives are C1-C5 alkanols.

20. (original) The process according to claim 19, wherein said alkanols are selected from methanol, ethanol, n-propanol, tert.-butanol and pentanols.
21. (original) The process according to claim 18, wherein said hydroxyl derivative is an aldite.
22. (original) The process according to claim 5, wherein said immobilization buffer includes a phenol or polyphenol.
23. (canceled)
24. (original) The process according to claim 1, wherein the releasing step is carried out using an aqueous salt or buffer solution.
25. (**currently amended**) The process according to claim 1, wherein the nucleic acids immobilized on the non-siliceous surface situated in said chamber of said isolation device are released using water.
26. (previously amended) The process according to claim 5, wherein said immobilization buffer comprises an aqueous solution of a chaotropic agent.
27. (previously amended) The process according to claim 26, wherein the chaotropic agent is selected from the group consisting of trichloro-acetates, thiocyanates, perchlorates, iodides, guanidinium hydrochloride, guanidinium isothiocyanate, and urea.
28. (previously amended) The process according to claim 26, wherein said immobilization buffer comprises a 0.01-molar to 10-molar aqueous solution of the chaotropic agent.
29. (previously amended) The process according to claim 28, wherein said immobilization buffer comprises a 0.1- molar to 7-molar aqueous solution of the chaotropic agent.

30. (previously amended) The process according to claim 29, wherein said immobilization buffer comprises a 0.2- molar to 5-molar aqueous solution of the chaotropic agent.
31. (previously amended) The process according to any one of claims 26 through 30, wherein said immobilization buffer comprises an aqueous solution of sodium perchlorate, guanidinium hydrochloride, guanidinium isothiocyanate, sodium iodide, or potassium iodide.
32. (currently amended) The process according to claim 1, wherein the non-siliceous surface situated in said chamber of said isolation device is a membrane.
33. (original) The process according to claim 32, wherein the membrane is a hydrophobic membrane.
34. (original) The process according to claim 33, wherein the hydrophobic membrane is made of a polymer with polar groups.
35. (original) The process according to claim 32, wherein the membrane is a hydrophilic membrane with a hydrophobisized surface.
36. (original) The process according to claim 32, wherein the membrane is composed of a polymeric material selected from the group consisting of nylon, a polysulfone, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorotrifluoroethylene copolymerisate, and polyphenylene sulfide.
37. (original) The process according to claim 36, wherein the membrane consists of hydrophobisized nylon.
38. (previously amended) The process according to claim 36, wherein the membrane is coated with a hydrophobic coating agent selected from the group consisting of paraffins, waxes,

metallic soaps, quaternary organic compounds, urea derivates, lipid-modified melamine resins, organic zinc compounds, and glutaric dialdehyde.

39. (original) The process according to claim 32, wherein the membrane is a hydrophilic or hydrophilized membrane.

40. (original) The process according to claim 39, wherein the membrane is composed of hydrophilized nylon, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorotrifluoroethylene copolymerisate, or polyphenylene sulfide.

41. (currently amended) The process according to any one of claims 32 through 40, wherein the membrane has pores which have a range of diameters ~~selected from the group consisting of 0.001 to 50 micrometers, 0.01 to 20 micrometers, and from 0.05 to 10 micrometers.~~

42. (canceled)

43. (canceled)

44. (previously amended) The process according to claim 1, wherein a chaotropic agent is used for the immobilization of the nucleic acids.

45. (previously amended) The process according to claim 44, wherein the chaotropic agent is selected from the group consisting of trichloro-acetates, thiocyanates, perchlorates, iodides, guanidinium hydrochloride, guanidinium isothiocyanate, and urea.

46. (previously amended) The process according to claim 44, wherein a 0.01-molar to 10-molar aqueous solution of the chaotropic agent is used for the immobilization of nucleic acids.

47. (previously amended) The process according to claim 46, wherein a 0.1-molar to 7-molar aqueous solution of the chaotropic agent is used for the immobilization of nucleic acids.
48. (previously amended) The process according to claim 47, wherein a 0.2-molar to 5-molar aqueous solution of the chaotropic agent is used for the immobilization of nucleic acids.
49. (previously amended) The process according to any one of claims 44 through 48, wherein the chaotropic agent is selected from the group consisting of sodium perchlorate, guanidinium hydrochloride, guanidinium isothiocyanate, sodium iodide, and potassium iodide.
50. (original) The process according to claim 5, wherein said immobilization buffer has a pH of from 3 to 11.
51. (**currently amended**) A process for isolating nucleic acids comprising immobilization of nucleic acids on one side of a membrane, wherein said membrane is situated in a chamber of an isolation device and wherein said chamber defines two opposing openings, followed by release of the nucleic acids and collection of the nucleic acids from the same side of the membrane on which the nucleic acids were immobilized and out of the same opening through which the nucleic acids were applied to said membrane.
52. (original) The process according to claim 51, wherein the membrane is composed of a material selected from the group consisting of nylon, polysulfone, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorodifluoroethylene copolymerisate, and polyphenylene sulfide.
53. (original) The process according to claim 52, wherein the membrane is a hydrophobisized nylon membrane.

54. (previously amended) The process according to claim 51, wherein the membrane is a hydrophilic membrane, which is coated with a hydrophobic coating agent selected from the group consisting of paraffins, waxes, metallic soaps, quaternary organic compounds, urea derivates, lipid-modified melamine resins, organic zinc compounds, and glutaric dialdehyde.

55. (previously amended) The process according to claim 51, wherein said process for isolating nucleic acids is carried out in a plurality of isolation devices installed on a multi-well plate.

56. (withdrawn)

57. (withdrawn)

58. (original) The process according to one of claims 51 through 55, wherein the immobilization of nucleic acids takes place at a pH of from 3 to 11.

59. (previously added) The process according to claim 3, wherein the washing step is carried out using a aqueous solution of a salt of an alkaline or alkaline earth metal with a mineral acid.

60. (previously added) The process according to claim 3, wherein the washing step is carried out using a aqueous solution of a salt from a monobasic, polybasic, or polyfunctional organic acid with an alkaline or alkaline earth metal.

61. (previously added) The process according to claim 3, wherein the washing step is carried out using an aqueous solution of a chaotropic agent.

62. (previously added) The process according to claim 3, wherein the washing step is carried out using a hydroxyl derivative of an aliphatic or acyclic saturated or unsaturated hydrocarbon.

63. (previously added) The process according to claim 3, wherein the washing step is carried out using a phenol or a polyphenol.

64. (previously added) The process according to claim 38 or claim 54, wherein said metallic soaps are in admixture with aluminum or zirconium salts.

65. (**new**) The process according to claim 41, wherein the membrane has pores which have a range of diameters from 0.01 to 20 micrometers.

66. (**new**) The process according to claim 41, wherein the membrane has pores which have a range of diameters from 0.05 to 10 micrometers.